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THE HENRY FORD MUSEUM AND GREENFIELD VILLAGE

by The Museum Staff

Americans by the millions once knew Henry Ford as an automotive pioneer and industrial genius. Those Americans, together with the present generation, today know him for another creation that like his Model T is becoming world famous — Henry Ford Museum and Greenfield Village.

Founded in 1929 as non-profit, educational institutions, both are dedicated to the preservation and display of historically significant technological, educational and artistic Americana. They are located in Dearborn, Michigan, 15 miles from downtown Detroit.

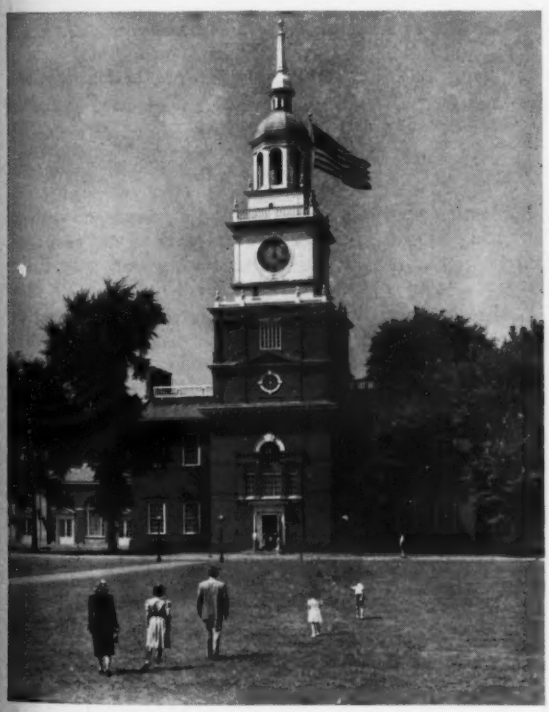
Now one of the nation's top tourist attractions, the museum and village annually attract nearly a million visitors — approximately equaling the combined total attendance at similar institutions.

Developed painstakingly through nearly three decades, the two present for today's generation a picture of early America available nowhere else. As planned by Ford, they will enable generations to come to view the rich heritage of our past.

As Ford expressed his aims:

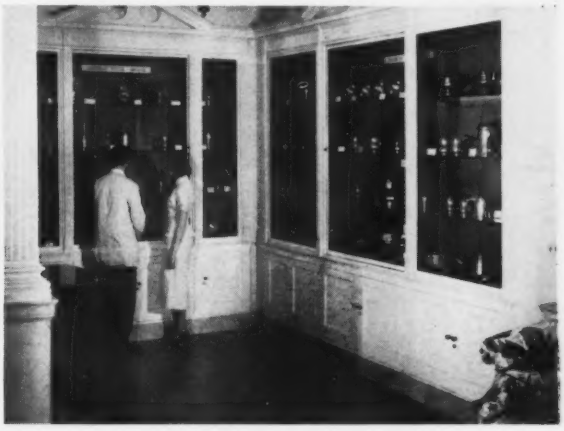
"When we are through, we shall have reproduced American life as lived; and that, I think, is the best way of preserving at least a part of our history and tradition."

Ford chose as the entrance to his museum a replica



FORD MUSEUM ENTRANCE

Independence Hall, symbol of American liberty, was chosen by Henry Ford for the entrance to his museum of American history. Extensive collections include American decorative arts, agriculture, steam and electric power, household arts, transportation and a street of early American shops.



HENRY FORD MUSEUM

Silver Gallery, American Decorative Arts Section

The work of America's leading silversmiths of the seventeenth to the nineteenth century from Boston, Newport, New York and Philadelphia are represented in the Henry Ford Museum's collection of American silver. A feature of the silver display is a group of silver by patriot Paul Revere of midnight ride fame and a handsome bowl by the New York silversmith Jesse Kip. The latter has added historical interest since it was America's first unaltered horse racing trophy, won in 1699. Comprehensive American decorative arts exhibits also include furniture, ceramics, glass, textiles and clocks and watches.

of Independence Hall. He had the original in Philadelphia copied, even what appeared architectural errors. Flanking Independence Hall are reproductions of Congress Hall and the Old City Hall in Philadelphia. These contain the decorative arts collections.

Beyond spans the main exhibition hall, with a Street of 22 Early American Shops, agricultural, power, communications and transportation displays. The entire museum covers 14 acres.

Inside the main entrance is the cornerstone, a glass-covered slab of cement dedicated on September 27, 1928, by Thomas Alva Edison. The great inventor inscribed his name, the date, left his footprint and thrust the spade of horticulturist Luther Burbank into the wet cement, symbolizing the union of agriculture and industry.

Ford used this unique cornerstone for a centerpiece and the museum now extends in three directions.

In the decorative arts galleries the visitor sees chronologically the whole development of American furniture and decorations from the Pilgrim period to the twentieth, period by period and style by style.

In the Street of Shops, the first such major installation in an American museum, the visitors can see how crafts, industries and trades of the late eighteenth and nineteenth centuries were practiced. These include candles, drugs, guns and locks, millinery, violins, carpentry, pewter, tailoring and barbering.

Since agriculture is the basic, most important, and one of the earliest activities of mankind, the exhibits in the main exhibition hall start with the development of agricultural implements, from the crudest plow to the modern harvester and farm tractor. The agricultural section also includes more than a score of late nineteenth century portable steam engines.

A partial view of the street of 22 craft shops inside the Henry Ford Museum. A number of these shops are staffed with working craftsmen.

Into the power section, Henry Ford funneled nearly every conceivable type of steam, early gas and oil engines. The grandfather of all steam engines, an English 1750 atmospheric pumping engine designed by Thomas Newcomen, towers over its more familiar descendants. Many pieces of this engine are original and were carefully disassembled, piece by piece, numbered, brought to the museum and reassembled.

The latest and also the largest engine, a gas-steam

The tools and equipment for the production of horn combs that can be seen in this shop were found in West Newberry, Massachusetts, an early center of the comb industry.

combination power plant of 6,000 horsepower with a seven-foot stroke, weighs 1,500,000 pounds and was used until 1928 in Ford's Highland Park plant, where the famous Model T was made.

In all, nearly 100 engines trace the development of power production from the Newcomen and James Watt engines up to the present day. Most are in running condition.

The museum has the most comprehensive electrical exhibit to be found anywhere. It portrays the history of generators, motors, electric lighting, telephone, telegraph, radio and even the early beginnings of television in the 1930's.

The drama of firefighting, from the hand-drawn equipment of the mid-eighteenth century through the horse-drawn equipment of the early twentieth century, is shown by more than 20 pieces of equipment.

The transportation section comprises the largest portion of the main exhibition hall. Here are rows of bicycles, more than a hundred horse-drawn vehicles, automobiles, airplanes and locomotives.

Nearly 175 steam, electric and gasoline-driven vehicles are in the antique automobile collection. The earliest is an 1863 Roper steam buggy; the latest, cars of the '30's and early '40's.

The aviation section includes early gliders, World War I trainers, the multi-engined monoplanes that carried Admiral Richard E. Byrd to the North and South

poles, the German monoplane that made the first westward Atlantic crossing, an autogiro and Vought-Sikorsky helicopter of 1941.

On parallel railroad tracks stand 12 full-size steam locomotives, ranging from a replica of George Stephenson's 1829 English Rocket through the 1831 DeWitt Clinton and Civil War types to a 600-ton, Allegheny of 1941, one of the largest steam locomotives ever made.

We can climb aboard a horse-drawn carriage for a leisurely ride through Greenfield Village, more than 200 acres of outdoor Americana.

This peaceful community of yesterday, with its one hundred seventeenth, eighteenth and nineteenth century homes and workshops, was named for the township of Greenfield near Dearborn where Mrs. Henry Ford was born and raised.

Foremost among the buildings dramatizing the life and times of Henry Ford is a simple farm homestead where he was born on July 30, 1863. Nearby is a small brick shed, known as 58 Bagley Avenue. It stood at the rear of one of Ford's early homes in Detroit and it was here, in 1896, that he built his first automobile.

Other buildings associated with Ford include the grade schools he attended, now utilized in the Village School System which runs through the sixth grade; the Magill and Grimm jewelry stores where as a youth he earned small sums for repairing watches; and the Edison Illuminating Company where he worked for eight years as an engineer.

The memory of Ford's good friend, Thomas Edison, is kept alive in the Menlo Park, New Jersey, where Edison worked for a decade starting in 1876. On the second floor of the main structure, a two-story, clapboard laboratory, Edison developed some of his most important inventions, including the incandescent electric lamp and the phonograph.

The other buildings in this group, all enclosed by a white picket fence, are an office and library; carpenter work shed; a carbon shed, where kerosene lamps were kept burning to accumulate lampblack for his electric lamp experiments; a wooden shed for glassblowing; and machine shop.

The gun and locksmith shop contains the necessary tools to carry on the trade as well as a good collection of American firearms.

Interior of the harness shop in which is housed a varied collection of horse equipment in addition to the complete set of leather working tools which have been used by Museum craftsmen in repairing and restoring harness in the collections.

Nearby is the Sarah Jordan boarding house, where some of Edison's bachelor assistants lived. It became the first private home in the world to be lighted by the Edison electrical system. Beside it is Edison's Florida laboratory, built in 1884 at Fort Myers, his last workshop and winter headquarters for 40 years.

HENRY FORD

Museum Automotive Section

The classic song "My Merry Oldsmobile," a favorite of grandfather's day, was undoubtedly once sung by drivers of many of the 175 antique cars now on display in the Automotive Section of the Henry Ford Museum's transportation display. Showing the three phases of automotive development — steamers, electrics and gasoline-powered cars — the automotive exhibit is a highlight for nearly a million visitors who tour the Museum and adjacent Greenfield Village annually. The antique cars are arranged chronologically and start with an unusual 1863 Roper Steam Carriage.

Other buildings in the Village associated with Edison are Smith's Creek Depot, where young Edison was ejected from a Grand Trunk train after a chemical he was using dropped and set fire to a baggage car; the homestead of his parents, from Vienna, Ontario, where his parents were married; and a building used at West Orange, New Jersey, his place of research following the decade at Menlo Park.

The friendship between Ford and Edison began August 12, 1896, when they were introduced at a convention of the Association of Edison Illuminating Companies at Manhattan Beach, New York. Told by Ford of his work on a "horseless carriage," Edison listened carefully and finally brought his fist down on the table with:

"Young man, that's the thing; you have it . . . keep at it!"

Ford later put what this meant to him in his own words:

"That bang on the table was worth worlds to me. No man up to then had given me any encouragement."

In the Greenfield Village craft shops, skilled artisans carry on trades long since passed from the American scene.

The Loranger Gristmill, for example, operates just as it did in the 1830's at Monroe, Michigan, and turns out a superior brand of whole wheat flour, corn meal and buckwheat flour with old burrstones.

Textile methods of 200 years ago, contrasted with those of modern production may be seen in the Plymouth Carding Mill from Plymouth, Michigan, near Dearborn.

The first powered silk mill in America, from Mansfield, Connecticut, still operates today nearly as it did in 1810. The wood machinery, with handforged steel shafts, was rebuilt from drawings of the original which was destroyed in a fire.

VILLAGE GREEN

THIS IS THE VILLAGE GREEN at Greenfield Village. Several buildings, all important to the life of the community a century ago, flank this "green" just as did those in early American communities. Around this area are the General Store, the Clinton Inn, an 1832 hostelry; the Court House, school, Town Hall and the Martha-Mary Chapel, seen at the right. This photo was taken during the Old Car Festival, an annual event that attracts several hundreds of antique automobiles to Greenfield Village.

CAPE COD WINDMILL

WINDMILLS came to America with the Pilgrims and were used chiefly to grind grain. This windmill was built on Cape Cod, near West Yarmouth, Massachusetts, in the mid-Seventeenth Century and generally is believed to be the oldest existing one in the United States. Early windmills usually were built along the seacoast, where they could utilize the strong winds sweeping off the Atlantic. Since the windmill would not operate properly unless the sails faced the wind, this mill has a revolving top. The long stem with the wheel at the end is used as a level to turn the entire roof section, which is mounted on rollers. The octagon-shaped windmill is 30 feet high and its sails measure 54 feet across.

Glassblowing, almost a lost art today, is practiced in the Sandwich glass plant, restored with portions of an 1825 plant from Cape Cod, Massachusetts.

In the tintype studio, the visitor may have a tintype portrait taken, just like his grandparents, using all the old-time props — head rests, posing chairs and even a derby hat.

At the nineteenth century blacksmith shop, sparks fly and the anvil's ring is heard for a considerable distance. The fire in the forge is kept glowing red by air forced from the bellows pumped by the smithy with one hand. Once a familiar landmark in American communities, the stone building stands in the shade of a spreading chestnut tree as did the one made famous by poet Henry Wadsworth Longfellow.

In the pottery shop, a craftsman fashions bowls, vases and other clay utensile, depending for the most part upon the skill of his hands as he turns the objects on a potter's wheel.

The oldest craft shop in the Village is the two-man Kingston Cooper shop, moved here from Kingston, New Hampshire, where it was erected in 1785. Using the schnitzelbank, or shaving horse, and other hand tools, the cooper built watertight hogsheads for commerce, barrels for shipping fruits or vegetables, buckets for maple sap and wooden pails for every home.

The Village Green is flanked by public buildings, just as in communities a century ago. At the head is the Martha-Mary Chapel, named for the mothers of Henry

and Mrs. Ford, of colonial-classic architecture. In the steeple is a bell cast by the son of Paul Revere.

Other buildings surrounding the Green are Clinton Inn, first overnight stop in 1832 on the Detroit-Chicago stagecoach route; Waterford General Store, still stocked with just about everything in family needs as in 1854; the Logan County Courthouse, from Lincoln, Illinois, where young lawyer Abraham Lincoln tried cases; a school and Town Hall.

Lincolniana in the Logan courthouse includes the chair he sat in the night of April 14, 1865, when he was assassinated in a Washington theater.

The carriage clomps along over a picturesque covered bridge, named for Joshua Ackley, a farmer. Among the last still standing in the United States, it was built in 1832 over a branch of Wheeling Creek in Southwest Pennsylvania.

Emerging from the 80-foot span, we see swans floating gracefully on a miniature stream before the carriage turns to go past the stately Susquehanna House and enter the main residential section.

For three centuries, the Susquehanna House stood on a high bluff overlooking the junction of the Patuxent River and Chesapeake Bay, about 90 miles south of Baltimore. Erected in 1652, it was first owned by Christopher Rousby, collector of customs for King Charles II.

INTERIOR OF EDISON'S LABORATORY

THIS IS THE SECOND FLOOR of the laboratory from Menlo Park, N. J., used by Thomas A. Edison as his main place of research from 1876-1886 and where he accomplished some of his greatest achievements, including his universal system of electrical lighting and power. The entire laboratory has been restored to appear as it did on October 21, 1879, when the first practical incandescent lamp was invented. At the left is the historic spot where that event took place. An upright stand supports a mercury air pump, while close by is the yellow armchair in which the inventor sat while he watched the "life" test of his experimental lamps. An assistant, Francis Jehl, stood on the stepladder and operated the pump. Fifty years later at this re-erected laboratory, Edison, watched by President Herbert Hoover, Henry Ford and others, re-enacted the experiment. Edison and his assistants played the organ in the background for relaxation. The downstairs of the laboratory was a machine shop.

Among the active crafts in Greenfield Village is that of tintyping. The development of the tintype process was an American contribution to the infant photographic industry and was developed by Professor Hamilton L. Smith of Kenyon College at Gambier, Ohio, in 1586.

Oldest American home in the Village is the Plympton House, built by Thomas Plympton in the mid-seventeenth century at Sudbury, Massachusetts. Small in size, measuring about 16 by 30 feet, the home is typical of the colonial period. One room served as a combined living room, bedroom and kitchen, with extra sleeping

A partial view of the wooden machinery employed in the Village silk mill for reeling and twisting silk strands from the 200,000 silk cocoons raised annually.

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CLAY PIPE MAKING AT SALEM, NORTH CAROLINA

by Frank P. Albright

While a large proportion of the tobacco in the 18th and early 19th centuries was consumed in the form of snuff and chewing tobacco — possibly chiefly because of the difficult lighting problem attending smoking — there was nevertheless a considerable amount smoked. Smoking was more a leisure time pleasure, with the pipes usually being lit from embers of the hearth, kitchen or candle fire.

For this leisure smoking, the "church warden" pipe with its long, fragile stem was quite suitable. While

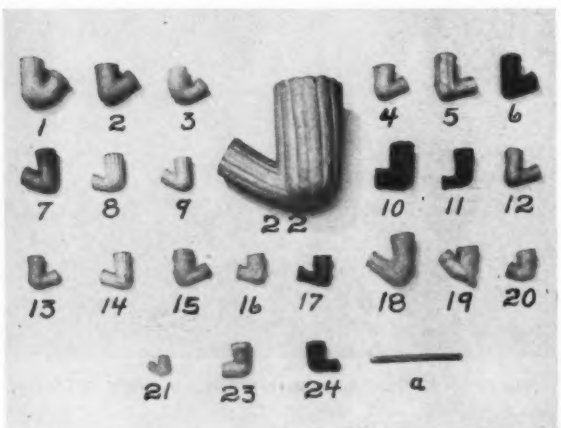

Figure 1.—A variety of Salem clay pipes and pipe stem.

there is no evidence of the church warden pipe at old Salem in North Carolina, a somewhat similar clay pipe with reed stem was made in tremendous quantities. While the potter was, quite naturally, the pipe manufacturer, he did not have a monopoly on the industry. In a contract in 1789, for instance, between the potter Rudolph Christ and the Moravian Church, which owned the pottery and controlled industries in Salem in general, Tycho Nissen was permitted to continue the manufacture of pipe heads. This exception was made, as the record states, because the wagon maker, Nissen, required the extra income for sustenance. The large pottery industry was capable, apparently, of adjusting to any output.

It is not known what volume of business Tycho Nissen did, or if other potters around Salem also produced pipe heads at that time, but a few scattered samples of the annual April 30th inventory is instructive of the output of the Salem pottery in 1789 (When Rudolph Christ succeeded Gottfried Aust as potter) there was on hand 464 dozen pipe heads; 1790, 16 dozen glazed and 100 dozen unglazed pipe heads; 1805, 100 dozen glazed and 3000 dozen unglazed (white) pipe heads; 1807, 200 dozen glazed and 4000 dozen unglazed pipe heads; 1811, 300 dozen glazed and 800 dozen unglazed pipe heads; 1822, (after John Holland had been potter nearly two years) 97 dozen glazed and 220 dozen unglazed pipe heads. The great variation may be largely fortuitous but, incidently, John Holland lost money with the pottery.

We have no record of the distribution of pipe heads, except that many were sent north, but two letters refer to a box of reed pipe stems which was shipped to John Jordon in Philadelphia in the spring of 1807.

The pipes were quite inexpensive. The inventory of 1789 lists 464 dozen pipe heads at 23 L 4s, which is a shilling a dozen. A shilling was then worth about 20c in the buying power of the time, making the price of a pipe less than 2c. This would probably be something like 15 to 20c of today's money. To this must be added a little for the stem, bringing the cost to nearly a quarter of a dollar. The inventory value was, of course, wholesale, but one need not add a large retail mark-up.

While the inventories indicate two categories of pipe, glazed and unglazed, there was actually quite a variety of shapes and sizes within these categories. The Wachovia Historical Society collection of Old Salem comprises 24 varieties at the present time and, since a few of these have been found recently, the total number may have been considerably larger. They were, however, not necessarily all used at the same time, for, as the molds wear out and are replaced, new types were occasionally added and old ones, less favored, were discontinued.

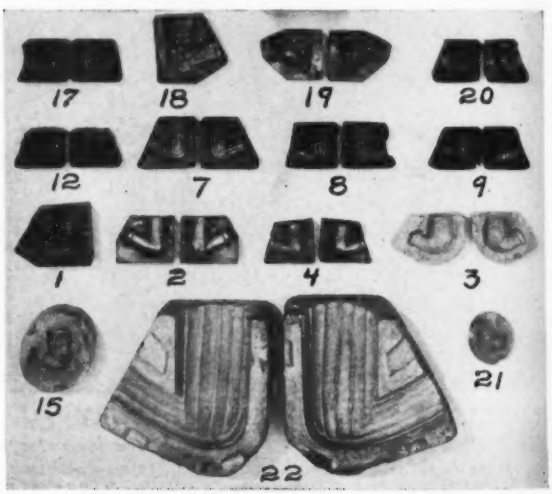

Figure 2.—Salem pipe molds of brass, lead and plaster.

In the following descriptive catalogue the difference between the size of the pipe and the mold is due to shrinkage of the clay in drying and firing. (H = height of pipe bowl; D = diameter of bowl).

1. H 2½" D1¼". Angle of stem 45°. Smooth, straight bowl with rounded bottom and roll-rim stem end.

MOLD: H 2⅞" D 1½". Brass with brass rim plate ⅛" thick attached to top of bowl. Three brass pegs hold the two halves of the mold together. One half of the mold is missing.

2. H 1¾"D 1¼". Angle 60°. Smooth, straight bowl with roll-rim stem end.

MOLD: H 2 D 1⅜". Brass with two bronze pegs.

PATTERN: Solid cast iron.
3. H 1¾" D 1¼". Angle 50°. Egg shaped bowl with roll-rim stem end.

MOLD: H 1⅞"D 1⅜". Plaster; bowl end open, stem end solid.
4. H 1⅝" D 1⅛". Angle 75°. Tapered bowl with small ridge rim and small roll-rim stem end.

MOLD: H 1⅞" D 1¼". Lead with brass rim on bowl fastened with brass screws. Two pegs, one wood, one iron. Top of mold very much worn from the pipe reamer.
5. H 2 1/16" D 1 ⅛". Angle 80°. Straight fluted bowl (12 flutes) and stem end (8 flutes).
6. H 1⅞" D 1 1/16". Angle 65°. Tapered fluted bowl (8 flutes) and smooth stem end.

PATTERN: No mold was found but there is a cast iron pattern, H 2⅛" D 1 3/16". It was probably cast round and the octagonal sides ground off. A hole approximately ⅛" diameter and ¾" deep was drilled into the stem end.
7. H 2" D 1⅛". Angle 65°. Tapered ribbed bowl (15 ribs) and stem end (15 ribs).

MOLD: H 2⅛" D 1¼". Lead with brass rims on bowl and stem end. Much worn, the bowl plate being worn almost through. The plates are leaded on. Two wood pegs on one half and brass lined holes on the other.
8. H 1¾" D 1⅛". Angle 75°. Slightly tapered fluted bowl (12 flutes) and stem end.

MOLD: H 1 15/16" D 1 3/16". Lead with iron rim plates. Two iron pegs and brass lined holes.
9. H 1⅝" D 1 15/16". Angle 60°. Straight fluted bowl and stem end.

MOLD: H 1¾" D 2 1/16. Brass with iron rim plates and two brass pegs leaded in.
10. H 2¼" D 1¼". Angle 45°. Straight bowl with ten small ribs on bowl and stem end.
11. H 1¾" D 1". Angle 90°. Straight bowl with double ridge around rim and 22 vertical ribs close together below, 16 of them continuing to the roll rim at end of stem end.
12. H 1¾" D ⅞". Angle 60°. Slightly tapered and slightly concave side with small ribs close together on bowl and stem end.

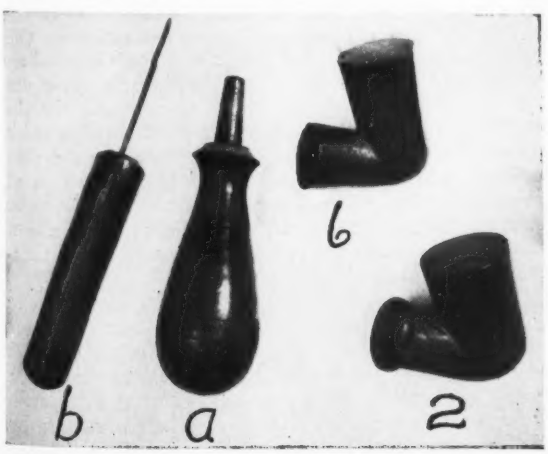

Figure 3.—Salem pipe patterns, reaming plunger (a) and punch (b)

MOLD: H 1⅞" D 1". Brass with two iron pegs.
13. H 1⅝" D ⅞". Angle 75°. Slightly tapered bowl on the lower part of which on each side is an eagle with a shield in relief. Above on one side in raised letters is the world SALEM and on the other N.C. On the stem end are the initials H. S., those of Henry Schaffner (1798-1877), potter 1833 to 1877 (ca.).
14. H 1¾" D 1". Angle 75°. Tapered fluted bowl and stem end. The lower part of the bowl is the face of a woman.
15. H 1¾" D 1⅛". Angle 65°. Bearded head with turban. Ribbed stem end.

MOLD: H 2" D 1¼". Plaster with top and stem ends solid. Half of the mold is missing.
16. H. 1⅜" D 1". Angle 60°. Smooth face with curly hair. Ribbed stem end.
17. H 1⅜" D 1". Angle 75°. Face with mustache and turban or knit cap. Foliate fluted stem end.

MOLD: H 1½" D 1 1/16". Brass with iron rim plate over a bronze one on bowl and bronze rim plate over an iron one on stem end. The bowl plates pinned on with iron and brass pins and all sweated on with solder. Two wooden pegs (originally had three).
18. H 2⅝" D 1¼". Angle 55°. Face with high foliate crown and foliated fluted stem end with SALEM N C in relief.

MOLD: H 3" D 1 1/16". Lead. An unused mold. Half missing. The edges are untrimmed and there are no pegs or peg holes. All but N and part of M of the inscription has corroded away.
19. H 2⅛" D 1⅛". Angle 30°. Head with long beard. Ribbed stem end.

MOLD: H 2¼" D 1¼". Three iron pegs.
20. H 1½" D 15/16. Angle 70°. Bearded head with much hair.

MOLD: H 1⅝" D 1 1/16". Lead with bronze rim plates fastened by two screws on each half. The bronze rim is almost new, showing very little wear. Two iron pegs.
21. H 1" D ⅝". Angle 60°. Head with mustache and fez-like cap.

MOLD: H 1⅛" D ¾". Plaster with top and stem end solid. Half missing.
22. H 6" D 3½". Angle 70°. Straight ribbed bowl and stem end. This large pipe was made for display purposes.

MOLD: 6⅞" D 3⅞". Plaster with top and stem end open.
23. H 1¾" D 1 1/16". Angle 90°. Tapered bowl with a relief design on each side: a circle within which are the words MOON SHINE around a crescent moon. These pipes were made about 1910 a few miles outside of Winston-Salem by William F. James for Bailey Brothers, Inc., who gave the pipes with bags of MOON SHINE tobacco. Mr. James was a successor of the Salem potters and used the same equipment.
24. H 1 9/16" D 1". Angle 90°. Straight bowl with ridge 5/16" from top of raised dots below and diagonal ridges on stem end. Brown clay with clear glaze. Glazed by dipping into a thin glaze. So far this is the only style of pipe found glazed.

We thus have 24 different pipes, 15 molds and two iron patterns. Five of the molds are brass of compositions varying almost to bronze, 6 are lead and 4 are plaster. All but 2 of the brass and 2 of the lead molds have been repaired with plates of brass, bronze or iron on the rim end of the bowl; and one brass and one lead mold also have such plates on the stem end. The plates are sometimes secured by screws and sometimes by sweating on with lead solder. The purpose is to reinforce the area of greatest wear so as to lengthen the life of the molds.

Plaster molds are somewhat special and were probably not used when large quantities of a pipe were required. While they are quickly and easily made, they also wear out rapidly and are not usable with the remaining press. Two of the molds, of which, unfortunately, we have only the half of each, have no openings for reaming or inserting clay. This indicates that they were used as press molds, the clay being pressed into the mold with the thumb before fitting the two halves of the mold together. This relatively slow process was in common use by Salem potters in making small, fancy pottery bottles.

Patterns for plaster molds could have been of clay, plaster, wood or metal. They probably were of clay or plaster, since this, especially clay, is the easiest to work with and since such patterns for pottery and stove tiles are still extant in Old Salem.

Our two iron patterns Fig. 3, no's. 2 and 6 were probably poured locally in sand molds and finished off with grindstone and file. They were used in making brass or lead pipe molds.

In casting these molds the iron pattern was laid on its side in sand, buried to half its depth. A metal dam was placed around it and the brass or lead poured over it to the desired thickness. The pattern and dam were presumably dusted with lamp black or some such substance to keep the metal from adhering. When the metal was sufficiently cool the pattern and dam with the poured half mold were turned over, cleared of sand, dusted with lamp black and the second half poured. The unfinished lead mold, No. 18, fig II, speaks eloquently of the process. The print of the metal dam is unmistakable. It is either an iron band sharply bent at the corners or built up of separate pieces of metal supported by the sand behind them. The wrinkled surface on the back of the mold is the top surface of the lead when poured over the pattern.

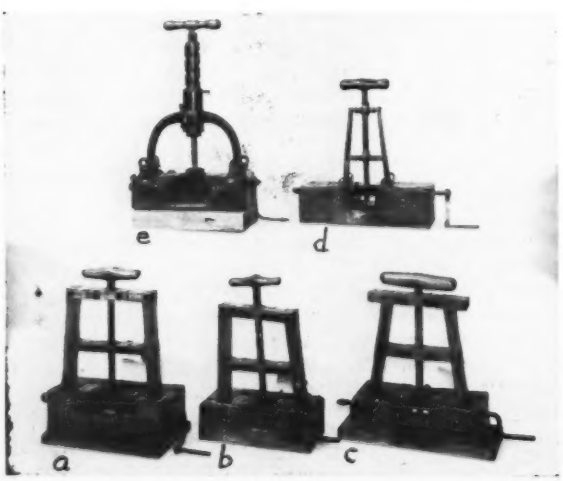

Figure 4.—Salem pipe reamer vises.

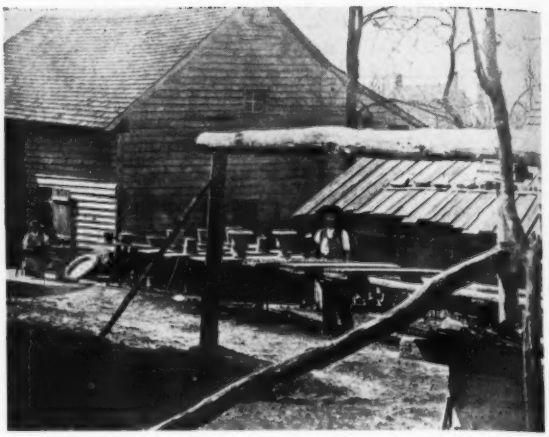

Figure 5.—Salem pottery in its last days, photo about 1900. Three racks of pipes, each holding 360 pipe heads, on trestle in front of kiln. Pipes were probably piled in kiln to fire them.

The other side of this mold has a shallow, smooth depression, approximately half an inch wide around the pipe pattern with the remaining surface slightly uneven. The edge where the smooth depression and the pipe surface meet is rounded. This is apparently as it has been cast. It appears then that the pattern for this mold was somewhat different from the two we have in our collection. The metal pattern must have been cast with a metal fin around its midst.

Two or three holes were drilled through the two halves of the mold and pins of metal or wood driven securely into the holes of one half projecting into the holes of the other to align the two halves. The molds were trimmed of unwanted irregularities and were then ready for use.

They were clamped in vises. Vises varied from ordinary shop vises to rather complex machines equipped with reaming appliances. Five of these reaming vises remain in the Wachovia Historical Society collection at Old Salem (Figure IV). They consist of a block of wood approximately 4″ by 5″ by 12″ with a niche cut out of one top edge approximately 2¼ cube. This niche is the vise which clamps the two halves of the mold together and is operated by a threaded shank with a crank on the right end of the block. The mold is centered by means of thumb screws at the back and the left side of the block. A frame fastened to the top of the block either side of the vise niche guides the plunger, or reamer, into the center of the bowl mold.

In operating the machine a lump of clay is placed into the bowl end of the greased mold (which had been clamped upright in the vise) and forced out of the stem end by means of the plunger. A few turns of the plunger reams the end of the pipe bowl. The excess clay is scraped off the stem end and the stem hole is made by inserting a plunger (called a peg) of wood or iron on a wooden handle (Figure IIIa). The reamers are then

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The Chronicle

Early American
Industries Association, Inc.

The purpose of the association is to encourage the study and better understanding of early American industry, in the home, in the shop, on the farm, and on the sea, and especially to discover, identify, classify, preserve and exhibit obsolete tools, implements, utensils, instruments, vehicles, appliances and mechanical devices used by American craftsmen, farmers, housewives, mariners, professional men, and other workers.

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Little Falls, New York

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Staten Island Historical Society
Richmond, Staten Island, New York

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General Chairman Whatsit Committee
Main Street, Windsor, New York

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621 N. Cherokee Ave., Los Angeles, California

Communications regarding the contents of *The Chronicle* and back issues should be addressed to the Editors; suggestions for members to John P. Fox ;all other matters to the President Address as here given.

DUES

The annual dues are payable on January 1st and are $5.00. The *Chronicle* is published quarterly and is sent to all members without additional charge. Printed on the press of the *Virginia* Gazette, founded 1736, *Williamsburg, Virginia.*

FALL MEETING

The Fall Meeting of the Early American Industries Association will be held on October 17, 18, and 19, 1958 at the Henry Ford Museum and Greenfield Village in Dearborn, Michigan. The Program Chairman for this meeting will be Mr. M. W. Thomas, Jr., Chief Curator of the Museum who will work closely in the development of this truly outstanding meeting with Mr. Edward Durell of Columbus, Ohio.

This outstanding Museum is admirably suited to the interests of the members of the Early American Industries Association and those members who attended the June meeting there several years ago will realize that this first meeting at the Henry Ford Museum was a high point of the meeting program of this organization. Mr. Thomas has prepared a tentative program for the meeting for this issue of the *Chronicle* and subsequent mailings dealing with the specifics of the meeting will be forwarded to the members in August and September.

TENTATIVE PROGRAM

Friday, October 17, 1958

Morning: Registration at the Dearborn Inn.
Optional trip to the Ford Motor Company Steel Plant and the River Rouge Assembly Line.
"Get Acquainted Luncheon."

Afternoon: General tour of the Henry Ford Museum.
Dinner.

Saturday, October 18, 1958

Morning: Behind the scenes special tour of the "Street of Shops" in the Museum and special craft demonstrations including glass blowing, pewter casting, silk worm culture, potting, blacksmithing, spinning and weaving, tin typing, candlemaking, hook rug pattern making, and milling. In addition there will be several special demonstrations not generally offered to the public.

Afternoon: Visit Greenfield Village Crafts and Industries.
Annual Banquet.

Sunday, October 19, 1958

Morning: Visit Greenfield Village Historic House Area.

Afternoon: Suggestions are as follows:
Addition time for visits to the Museum and Village.
Visit to the Detroit Institute of Arts.
Visit to the Detroit Historical Society.
Visit to Cranbrook Science and Art Museum.

Registration will be at the Dearborn Inn, an outstanding hotel with excellent accommodations and food. The Inn is located within a quarter of a mile of the Museum proper and members planning to attend the meeting are urged to make their reservations no later than September 15, 1958. In the immediate Dearborn area there are a number of excellent motor courts for those who prefer this type of accommodations.

The President and Directors of the Early American Industries Association have requested that the Editors urge the membership to make arrangements to attend this Fall meeting. A high level of attendance is necessary to permit the Association to continue with its program of two annual meetings each year.

The Chronicle

WHATSITS

We have had two "whatsits" sent to us which we considered interesting enough to pass on to our members for possible identification.

The "bucket" in figure one is owned by Mrs. Emily Stuebing, Flower Show School instructor of Pittsburgh, Pennsylvania. It was presented to her to arrange flowers in. She informed us that she has carried it with her on her lecture tours and taken it into various shops for identification but has never succeeded in finding anyone who could positively state what it was used for. She has had numerous suggestions, such as: lamp; pail for milking,

Figure 1.

one for each teat; milk separator; pail for feeding calves; coffee pot to fill three cups at a time; pail to pour paraffin on three jelly glasses at a time; croup kettle; beer bucket; sausage stuffer; and the one we think best; thesis for Doctor of Tinsmithing!

The bucket is of tin, and has six spouts 5 inches long and equal distant around the sides, diameter 7 inches, and height 6 inches. We have been unable to find any answers here and we hope some of you can identify it.

Mr. Fred B. DeWitt, Hillcrest Farm Museum, Griswold, Iowa sent us his whatsit, figures two and three. The object was found in an old barn on the Old Mormon Trail, a few miles north of Griswold. It is well made and of brass, except for the wooden handle, and was green with tarnish when first found, but has been handled so much, the brass is now showing through. Hundreds of people have examined it as well as several Historical Societies and Museums, but none have been able to identify it and tell what it was used for.

When the thumb lever (fig.E.) is pushed down it

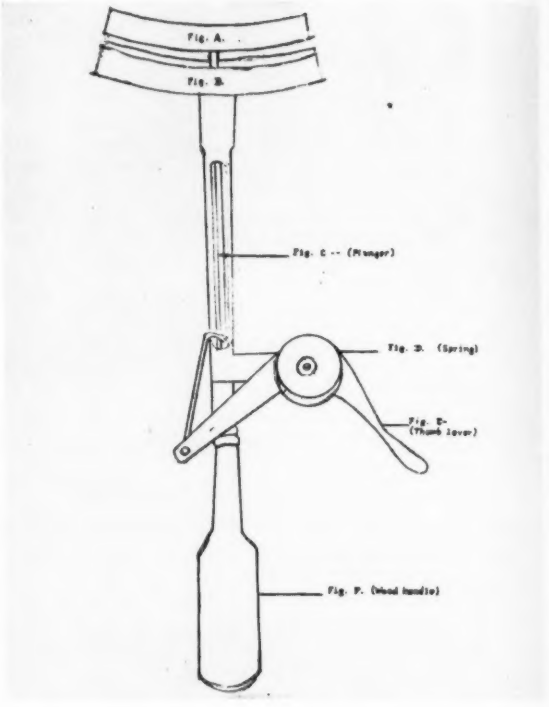


Figure 2.

raises the plunger (fig.C) and a flat plate, slightly oval in shape (fig.A). This plate is raised about four inches and when the thumb lever is released the spring (fig.D) forces the plunger back to its original position. The plate (fig.A) would fit into the receiver (fig.B) if allowed to come back far enough, but there is a space of about ¼ of an inch, between fig. A and fig. B. The tool is about 10½ inches long and the "grips" are about 3½ inches.

Mr. DeWitt states that they have many tools in their farm museum but that this is the only one that they have been unable to identify.

He has had several "guesses" of which no two have

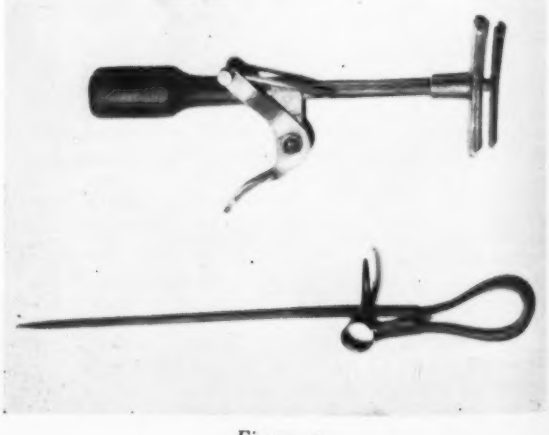


Figure 3.

been the same. One party said it was a model for a brake on a wagon, another said it was a tool used by printers and another said it was used to cut leather washers for the old fashioned wooden pumps, and Mr. DeWitt's guess is that they are all wrong! There are no cutting edges on the tool and he does not see how the tool could be used for the other purposes mentioned .

Upon examining the photographs it appears to us that the two end pieces, figs. A and B are vises or grips. Might these have been used to turn or fold over, for example, tin to form a rim?

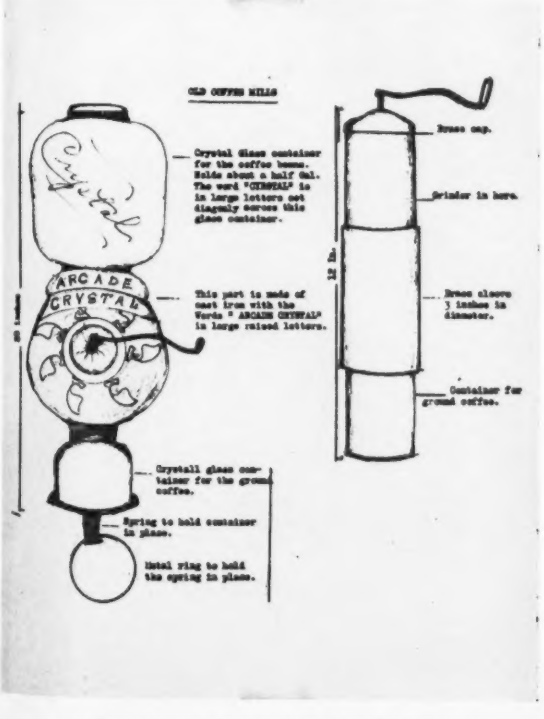
The other tool in the picture, Mr. DeWitt writes, puzzled all the experts in his part of the country for some time, before it was identified. It is one of the first "candle holders" used by the first gold miners in Colorado, and was found in the rear of an old hardware store in Denver Colorado. It is 15 inches long, hand made of wrought iron and has a hook for attaching to the bill of a cap. When the miner got to the place in the mine where they were working they would stick the point in the wall of the mine for a stationary light.

OLD COFFEE MILLS

Mr. DeWitt, who sent us the interesting Whatsit, was very much interested in Laurence A. Johnson's article on Early Home Coffee Roasters in the December 1957 issue of the Chronicle. The Hillcrest Farm Museum has a collection of Coffee Mills from which Mr. DeWitt sent us two excellent drawings of the one she considers the most interesting.

The "Arcade" coffee mill is the only one Mr. DeWitt has found in his part of the country. It is in good shape and does not appear to have been used very much, but does look quite old. On the back is a bracket to fasten the mill to a wall. There are no patent marks, figures or letters other than appear on the drawing.

The German coffee mill was sent to him by a friend from Germany. It is solid brass except for the handle, which is steel and the grinder is metal of some kind. It is claimed it is almost 300 years old and is quite rare. To fill the mill, the crank and cap lift off. The lower container is pulled down to remove the ground coffee. There is no lettering of any kind on the mill.


OLD COFFEE MILLS
Crystal glass container for the coffee beans. Holds about a half Gal. The word 'CRYSTAL' is in large letters cut diagonly across this glass container.
ARCADE
CRYSTAL
This part is made of cast iron with the words " ARCADE CRYSTAL" in large raised letters.
Crystall glass container for the ground coffee.
Spring to hold container in place.
Metal ring to hold the spring in place.
Brass cap.
Grinder is here.
Brass sleeve 1 inches in diameter.
Container for ground coffee.

Arcade and German Coffee Mills.

INTERESTING PUBLICATIONS

For several years the New Jersey Agricultural Society, Trenton, N. J., has been publishing each year, for distribution to its members, a monograph on some aspect of early New Jersey history. Usually a few extra copies are printed for sale at cost to libraries and interested persons. At present the Society has on hand extra copies of the three following paper-bound books for sale, post-paid, at $2.00 a copy:

"The Early Grist and Flouring Mills of New Jersey," by Harry B. Weiss and Robert J. Sim, Trenton, N. J., 135 pages. This is a descriptive account of early mills and milling, millponds, raceways, power, such as windmills, water wheels, water turbines, millstones, early machinery, cleaning, grinding and bolting, the hazards of early milling and descriptions of gristmills which have passed out of existence. The emphasis is on early methods and practices. The work carries illustrations of early hand mills, gristmills, parts of machinery, millstones, turbines, mill gearing, tools, etc., photographs of old mills, and a bibliography.

"The Early Fulling Mills of New Jersey" by Harry B. Weiss and Grace M. Ziegler, Trenton, N. J., 79 pages. In this publication the little-known fulling mill that played an important part in homespun woolens wearable is treated from the standpoint of operation and machinery, with the emphasis on the development of the mill. There are chapters on the early mills, fuller's supplies, early detergents, early fulling practices, teasels and teaseling, early dyeing, and the locations of early fulling mills from 1667 to 1835. Exact descriptions of early methods are outlined and the work is illustrated by photographs of early fulling mills, teasels, teasel gigs, etc. It includes a bibliography.

"The Early Woolen Industry of New Jersey," by Harry B. Weiss and Grace M. Ziegler, Trenton, N. J., 100 pages. This book traces the history of the early woolen industry, beginning with sheep and wool and continuing through the early weavers, manufacturing in the home, early carding and combing in homes and mills, early spinning and weaving in homes and mills, locations and proprietors of picking and carding mills, woolen mills, spinning and weaving supplies, early diseases of fullers and weavers, etc. Early operations are described in detail, with photographs of wool combing, early looms, and woolen and linen coverlets. This book is a companion to the one on the early fulling mills. A bibliography is included.

THE HENRY FORD MUSEUM

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room upstairs.

A Cape Cod windmill stands majestically near. Built in the late seventeenth century, it is generally believed to be the oldest existing one in the United States. Octagon-shaped and shingled, with stone foundation, its giant wood sails measure 54 feet across.

Farther along, the large, gray Secretary House, was built in Exeter, New Hampshire, in the mid-eighteenth century by a wealthy sea captain. Its name came from its next owner, Joseph Pearson, first secretary of state of New Hampshire.

The next home was built in 1822 in New Haven, Connecticut, for Noah Webster. The large, yellow, multi-roomed house contains a soundproof study upstairs where Webster finished his monumental dictionary.

The Village potter operated a foot-powered wheel and produces wares similar to those produced in 19th c. America.

A red farmhouse was the Lancaster, Massachusetts, birthplace on March 7, 1849, of Luther Burbank.

Reminiscent of folk song composer Stephen Collins Foster, a white frame cottage stands on a high bank with the rear of the house overlooking a lagoon. The house was built about 1830 in Lawrenceville, Pennsylvania, on land once owned by the father of the composer. The home contains many Foster family heirlooms.

Below the Foster Memorial, the colorful, whistle-tooting Suwanee helps recapture the early American steamboat scene. Patterned after a stern-wheeler that once cruised the Suwanee River of Foster's song, the boat now carries visitors around a circular lagoon and is one of the Village's most popular summertime attractions.

A simple, one-room log cabin that once stood in Washington County, Pennsylvania, was the birthplace September 23, 1800, of William Holmes McGuffey of school textbook fame. Ford used and admired the McGuffey readers.

Aviation pioneers Orville and Wilbur Wright are represented by their Cycle Shop and homestead, both from Dayton, Ohio. The brothers began making bicycles in the shop in 1896, meantime carrying on aviation research. They made parts here for their first plane which later was assembled and flown at Kitty Hawk, North Carolina, in 1903. Orville Wright was born in the nearby homestead in 1871 and Wilbur died there in 1912.

The industrial section of the Village is a study by itself into the manufacturing methods of yesteryear. Buildings include the Sandwich glass plant; a sugar mill, assembled with parts of one found in Louisiana; a cotton gin mill, a seventeenth century sawmill from Georgetown, Massachusetts; pottery shop, brick and tile works, carriage shop and a replica, two-thirds size, of the first plant of the Ford Motor Company, where the first Ford production cars were assembled from 1903 through 1906.

Painstaking care marked the transfer of the homes and workshops from original sites and reassembly in Greenfield Village. Thousands of miles of travel would have been necessary to visit all of them at former locations.

Moreover, many would by now have disappeared from the American scene and hence lost forever. The Susquehanna House, for example, was doomed early in World War II by construction of a Naval Air Station; the Webster House was in the way of Yale University's modernization plans; the Ackley covered bridge was scheduled for replacement; and the Logan County Courthouse, a store in later years, was in bad condition and forgotten by all except historians.

So it was that Henry Ford, the industrialist whose bustling assembly lines helped push the modes of nineteenth century America into the limbo of the past, preserved these and other structures of an earlier, more tranquil America for future generations.

CLAY PIPES

(Continued from Page 20)

withdrawn and a small hole is made from the stem hole to the bowl with a wire fastened to a wooden handle (Figure IIIb). The mold is unclamped and the clay pipe carefully removed from the mold and hung on a peg board to dry.

Three of our reaming vises have wooden plunger frames, somewhat carelessly made and of a late date, probably mid-19th century. Presumably they replace worn out vises of earlier date. The other two are 18th century. One (Figure IVd) is similar in design to the three but the frame is of wrought iron very carefully made. The other (Figure IVe) is somewhat larger, accommodating molds to the thickness of 2⅞". The heavy frame is a composite structure consisting of a semicircular support spanning the vise with a detachable tube to contain the plunger rod, which in this machine is wood. The tube has a large spiral, or thread, on its outer surface. It probably had originally a mechanism to screw the plunger down. It also has a hook on the front of the crescent support and bolt holes horizontally through the block at either side of the clamp niche. The mechanism which had been attached here was probably a support for the pipe stem reamer. On a large pipe support would be a good aid in centering the stem hole.

When the last Salem potter retired late in the 19th century, much of the pottery equipment including the present collection of pipe making machinery found its way into the Wachovia Museum; other tools were given to journeymen who tried to carry on the business for another generation. Of this effort we have the MOON SHINE pipe, which closes the day for potters of the Salem area.